



DSP SERIES

Oil Free Rotary Screw Air Compressors

30–300 hp • 22–240 kW



Sullair & Hitachi

Since 1965, Sullair air compressors have been known for their Reliability, Durability and Performance. The legacy continues now as Hitachi Global Air Power – featuring the legendary Sullair product line. Together, two titans in the industry bring experience, engineering and expertise for every compressed air need.

**RELIABILITY.
DURABILITY.
PERFORMANCE.**

These are the pillars that drive the quality of Sullair compressors. It's a promise every Sullair machine makes.

RELIABILITY

Customers who work with Sullair compressors have found intangibles make all the difference—things like trust, confidence and peace of mind. They go to work every day having full faith in their equipment, as well as the knowledge they have access to true compressor experts ready to support them every step of the way.

DURABILITY

Hitachi Global Air Power represents the collective strength of more than 150 years of compressor experience and the legendary durability of Sullair products. In shops and factories all around the world, our products have withstood the test of time, running consistently today as they did on day one.

PERFORMANCE

Our vision for success is two-fold: produce clean, quality air for the job at hand, and provide cost-effective solutions for now and the long term. With high standards of efficiency for our compressors, we are committed to customer performance—especially in applications where air purity is critical.

The Hitachi Global Air Power network of engineering and quality experts continues to build next-generation, environment-forward compressed air solutions to meet the demands of today's hard-working customers.

THE SULLAIR OIL FREE SEAL

The Sullair Oil Free Seal is your assurance the compressor produces the clean air required for your operational needs. All Sullair compressors which meet the ISO standard for Class 0 oil free air ISO 8573-1 carry the Sullair Oil Free Seal.



OIL FREE COMPRESSION AND ROTARY SCREW DEPENDABILITY

The DSP Series rotary screw air compressors are the perfect choice for applications requiring completely oil free air, including:

- Pharmaceuticals
- Food and beverage manufacturing
- Electronics
- High-technology manufacturing
- Textile manufacturing
- Robotics
- Automotive
- Paint

The DSP is powered by the robust Hitachi two-stage air end—with thousands of successful oil free rotary screw compressor installations around the world.

Why Oil Free?

In many operations, compressed air comes into contact with items in the manufacturing process. When air purity is critical—oil free air is essential. Oil particulates in compressed air can contaminate downstream processes and production. Oil Free compressors eliminate potential contamination as no oil or lubricant is introduced into the air compression process. Reduced risk of contamination helps improve your business operations and profitability.



AIR QUALITY STANDARDS ISO 8573-1 CLASSES

Class	Solid Particle Maximum number of particles per m³			Pressure Dew Point °F (°C)	Oil (incl. vapor) mg/m³
	0.1–0.5 micron	0.5–1.0 micron	1.0–5.0 micron		
0	As specified by the end-user or manufacturer, and more stringent than Class 1				
1	≤ 20,000	≤ 400	≤ 10	≤ -94° (-70°)	0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40° (-40°)	0.10
3	—	≤ 90,000	≤ 1,000	≤ -4° (-20°)	1.00
4	—	—	≤ 10,000	≤ 37.4° (3°)	5.00
5	—	—	≤ 100,000	≤ 44.6° (7°)	—
6	—	—	—	≤ 50° (10°)	—



OIL FREE

Class 0 Oil Free Air—For applications in which air purity is essential, including pharmaceuticals, food and beverages, electronics, automotive painting, and textiles.

DSP Series compressors are tested to meet certified class 0 oil free requirements under ISO 8573-1.

DSP SERIES

RELIABLE HITACHI ENGINEERED PACKAGE DESIGN BASED ON
MORE THAN 50 YEARS OF OIL FREE ROTARY SCREW EXPERIENCE

Designed for the ultimate in reliability, the DSP Series includes these key features:

- Allowable ambient temperature 104°F (40°C)
- Noise-reducing package including:
 - Full enclosure as standard
 - Mechanical and electrical vibration isolation
 - VSD fan
- VSD packages under 50 hp (37 kW) include DCBL motors
- Maintenance and service-friendly features include:
 - External grease fittings on 50 hp (37 kW) motors and larger
 - Easy access to air and oil filter elements

SRF DS COMPRESSOR FLUID

Specifically formulated for oil free rotary screw compressors

SRF DS is a high-performance, petroleum-based synthetic fluid for oil free rotary screw compressors. This long-life, high-viscosity fluid helps improve compressor efficiency by optimizing gearbox lubrication—which helps you save money.

- Long-lasting—up to 8000 hours
- Excellent oxidation control
- Exceptional lubrication
- Thermally stable

Controller features include:

- Simple LCD monitor screen
- Lead/Lag capability
- Optional communication protocols include MODBUS and BACnet

DSP Model Features Include:

- 1a and 1b. Hitachi two-stage air end**—featuring stainless steel rotors and patented PTFE-free coating. Both first and second-stage air ends are easy to remove separately for long-term maintenance needs.
- 2. Hitachi TEFC electrical motor**—reliable, high-efficiency—features external grease fittings
- 3. Centrifugal cooling fan**—with efficient TEFC fan motor
- 4. Patented Oil Mist Remover**—Gearcase oil mists are recaptured and recycled—improving ultimate air quality while reducing top-off requirements
- 5. Aftercooler**—provides second stage of cooling in conjunction with patented High Pre-Cooler
- 6. Drain Separator**—located before second stage air end to help remove moisture from first stage compression
- 7. Flange customer connection**—simplifies installation
- 8. Solid baseplate**—provides additional noise-dampening
- 9. Easy access oil filter**—magnetic door panels do not need to be removed



DSP Series Oil Free Air Compressors feature a 3-year package warranty and a 5-year air end warranty.*

**Restrictions apply.*





DSP SERIES

The DSP Series brings advanced oil free operations right where it is needed: your facility! Built on Hitachi engineering, the DSP is designed to supply oil free air reliably, efficiently and quietly—today and tomorrow.



DPS SERIES PRODUCT LINE OVERVIEW										
Motor Output (hp)	30	40	50	125	150	175	200	215	250	300
Motor Output (kW)	22	30	37	90	110	132	145	160	200	240
Air-Cooled/Fixed Speed	■	■	■	■	■	■	■	■	■	■
Air-Cooled/Variable Speed			■	■	■					
Water-Cooled/Fixed Speed				■	■	■	■	■	■	■
Water-Cooled/Variable Speed				■	■			■		■
← 100–128 psi (7–8.8 bar) → ← 100–135 psi (7–9.3 bar) → ← 110–125–145 psi (7.6–8.6–10 bar) → ← 114 cfm (3.2 m³/min) → ← 1430 cfm (40.5 m³/min) →										

TWO-STAGE OIL FREE ROTARY SCREW 60 - 100 hp (45 - 75 kW) MODELS ARE NOW AVAILABLE AS PART OF OUR DS SERIES LINE.

VISIT
HitachiGlobalAirPower.com/OilFree
TO LEARN MORE.

DS SERIES PRODUCT LINE OVERVIEW			
Motor Output (hp)	60	75	100
Motor Output (kW)	45	55	75
Air-Cooled/Fixed Speed	■	■	■
Air-Cooled/Variable Speed		■	■
Water-Cooled/Fixed Speed	■	■	■
Water-Cooled/Variable Speed		■	■
← 100–150 psi (7–10.3 bar) → ← 222–483 cfm (6.3–13.7 m³/min) →			

KEY DSP FEATURES

INNOVATIVE AIR END CONSTRUCTION

Key features:

- Rotor design, material and coating optimized for efficiency
 - Stainless steel rotors in first and second stage
 - Patented PTFE-free rotor coating
 - Rotor housing coated internally

Benefits:

- All aspects of the air end have been carefully engineered to provide long life and high efficiency
 - The stainless steel rotors, patented rotor coating and coated housing provide long life of air end



PATENTED HIGH PRE-COOLER DESIGN (AIR-COOLED UNITS)

Key features:

- Stainless-steel high pre-cooler placed before aftercooler

Benefits:

- Helps prevent thermal fatigue and premature failure of the aftercooler, providing higher reliability and durability

MOTORIZED ISOLATION VALVE (MIV)

Key features:

- Located at the compressed air discharge, the MIV helps avoid migration of moisture back into the compressor package when the DSP is not running
 - Opens when the motor is running and closes when the motor is off

Benefits:

- Provides additional protection for the compressor against downstream humidity—one of the biggest enemies of oil free screw compressors



OIL MIST REMOVER (OMR)

Key features:

- Removes oil mist from gearcase with 99.99% efficiency
- Maintains gearcase at negative pressure

Benefits:

- Recaptured oil mist is returned, reducing gearcase top-offs needed—saving you money
- Helps ensure a cleaner production environment around the compressor

CAPACITY CONTROL SYSTEM

FIXED SPEED

Key features:

- Spool type—simple design
- Pneumatically controlled
- Designed to operate 1 million cycles/year

Benefits:

- High reliability and durability
- Lower maintenance cost
- Longer maintenance intervals

VARIABLE SPEED DRIVE

Key features:

- No inlet valve on VSD
- Two-speed reduction
- Turndown works always in the most efficient range of specific power

Benefits:

- No restriction means no air losses at inlet
- Minimize power consumption at unload condition
- Power consumption at no load is reduced up to 30% vs fixed speed of same model

MOTORS, INVERTERS AND PHASE MONITOR

Key features:

- Hitachi motors
 - IE3, TEFC and IP44 (Fixed Speed 22-240 kW models and VSD 160-240 kW models)
 - TEFC, DCBL-PPM and IE4 (DSP37V model)
- VSD fan motors on DSP22–37
- Hitachi inverters
- Phase monitor standard

Benefits:

- Support provided in-house—no external motor suppliers to navigate
- Motors are high efficiency and very compact
- More efficient cooling system
- Support provided in-house—no external inverter suppliers to navigate
- Protects the compressor against improper reverse rotation at startup

OPTIONS AVAILABLE — FIXED SPEED MODELS

- NEMA 4
 - For electrical panel and controller
- Weather Hood + NEMA 4
 - Includes rain protection cover and intake louvers protection
- Cold Weather Package
 - Includes oil sump heater, control box heater and thermostat, heat trace control and condensate lines
 - Available only with air-cooled models
- Container—all-weather enclosure

WARRANTY INFORMATION:

All DSP Series Compressors feature a 3-year package warranty and a 5-year air end warranty when continuously serviced with Genuine DSP parts.*

**Restrictions apply.*



TECHNICAL SPECIFICATIONS

FOR MORE INFORMATION, CONTACT YOUR
LOCAL AUTHORIZED SULLAIR DISTRIBUTOR.



Scan to view the
full Oil Free line.

FIXED SPEED — 60 Hz	POWER		PRESSURE	PERFORMANCE	DISCHARGE CONNECTION	WEIGHT	DIMENSIONS — W x D x H	dBA
Model	hp	kW	psi (bar)	cfm (m³/min)	inches	lbs (kg)	inches (mm)	
DSP2209AY	30	22	125 (8.6)	117 (3.3)	1.5" NPT	2490 (1130)	60.3 x 45.3 x 65 (1530 x 1150 x 1650)	69
DSP3009AY	40	30	125 (8.6)	141 (4.0)	1.5" NPT	2650 (1200)		70
DSP3709AY	50	37	125 (8.6)	166 (4.7)	1.5" NPT			71
DSP4509AY	60	45	125 (8.6)	230 (6.5)	2" Flange	3350 (1520)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)	72
DSP5509AY	75	55	125 (8.6)	272 (7.7)	2" Flange			
DSP7509AY	100	75	125 (8.6)	392 (11.1)	2" Flange	3990 (1810)	88.6 x 51.2 x 70.9 (2000 x 1300 x 1800)	
DSP9009AY	125	90	125 (8.6)	544 (15.4)	2" Flange	5250 (2380)	84.6 x 59.8 x 77.8 (2150 x 1520 x 1975)	77
DSP11009AY	150	110	125 (8.6)	611 (17.3)	2" Flange	5600 (2540)		79
DSP13210AY	175	132	125 (8.6)	742 (21.0)	2.5" Flange	8598 (3900)	114.2 x 75.2 x 75.8 (2900 x 1910 x 1925)	77
DSP14510AY	200	145	125 (8.6)	805 (22.8)	2.5" Flange			78
DSP16010AY	215	160	125 (8.6)	894 (25.3)	2.5" Flange	8818 (4000)		
DSP20010AY	250	200	125 (8.6)	1169 (33.1)	3" Flange	11,464 (5200)	126 x 82.3 x 76.8 (3200 x 2090 x 1950)	80
DSP24010AY	300	240	125 (8.6)	1296 (36.7)	3" Flange			81
DSP4509WY	60	45	125 (8.6)	236 (6.7)	2" Flange	3660 (1660)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)	65
DSP5509WY	75	55	125 (8.6)	279 (7.9)	2" Flange			
DSP7509WY	100	75	125 (8.6)	399 (11.3)	2" Flange	3280 (1490)		
DSP9009WY	125	90	125 (8.6)	551 (15.6)	2" Flange	5030 (2280)	84.6 x 59.8 x 71.9 (2150 x 1520 x 1825)	75
DSP11009WY	150	110	125 (8.6)	622 (17.6)	2" Flange	5380 (2440)		76
DSP13210WY	175	132	125 (8.6)	770 (21.8)	2.5" Flange	8378 (3800)	98.4 x 63 x 75.8 (2500 x 1600 x 1925)	74
DSP14510WY	200	145	125 (8.6)	837 (23.7)	2.5" Flange			
DSP16010WY	215	160	125 (8.6)	925 (26.2)	2.5" Flange			10,582 (4800)
DSP20010WY	250	200	125 (8.6)	1169 (33.1)	3" Flange	110.2 x 70.9 x 76.8 (2800 x 1800 x 1950)	75	
DSP24010WY	300	240	125 (8.6)	1303 (36.9)	3" Flange		76	
VARIABLE SPEED — 60 Hz	POWER		PRESSURE	PERFORMANCE	DISCHARGE CONNECTION	WEIGHT	DIMENSIONS — W x D x H	dBA
Model	hp	kW	psi (bar)	cfm (m³/min)	inches	lbs (kg)	inches (mm)	
DSP3709AV	50	37	125 (8.6)	162 (4.6)	1.5" NPT	2120 (960)	60.3 x 45.3 x 65 (1530 x 1150 x 1650)	72
DSP5509AV	75	55	125 (8.6)	272 (7.7)	2" Flange	2980 (1350)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)	70
DSP7509AV	100	75	125 (8.6)	385 (10.9)	2" Flange	3480 (1580)	88.6 x 51.2 x 70.9 (2250 x 1300 x 1800)	72
DSP9009AV	125	90	125 (8.6)	544 (15.4)	2" Flange	5470 (2480)	84.6 x 59.8 x 77.8 (2150 x 1520 x 1975)	77
DSP11009AV	150	110	125 (8.6)	611 (17.3)	2" Flange	5580 (2530)		79
DSP5509WV	75	55	125 (8.6)	283 (8.0)	2" Flange	2930 (1330)	78.8 x 51.2 x 70.9 (2000 x 1300 x1800)	66
DSP7509WV	100	75	125 (8.6)	403 (11.4)	2" Flange	3130 (1420)		69
DSP9009WV	125	90	125 (8.6)	551 (15.6)	2" Flange	5250 (2380)	84.6 x 59.8 x 71.9 (2150 x 1520 x 1825)	75
DSP11009WV	150	110	125 (8.6)	622 (17.6)	2" Flange	5360 (2430)		76
DSP16009WV	215	160	125 (8.6)	925 (26.2)	2.5" Flange	8819 (4000)	98.4 x 63 x75.8 (2500 x 1600 x 1925)	75
DSP24009WV	300	240	125 (8.6)	1303 (36.9)	3" Flange	11,244 (5100)	110.2x70.9x76.9 (2800x1800x1950)	76

NOTE: Not all models available in all regions. Your authorized Sullair distributor can confirm model availability.